

Draft Fire & Burn- Related Injury

6/26/2006

Definition: All fire related deaths and hospitalizations, including those involving flames and hot objects or substances. Fire hospitalizations for 1989 through 2004 and deaths for years 1980 through 1998 include all records with an ICD 9 code of E890-E899, E924, E958 (.1,.2,.7), E961, E968(.0,.3), E979.3, or E988(.1,.2,.7). For deaths between 1999 through 2004, the applicable ICD 10 codes include X00-X19, X76-X77, X97-X98, Y26-Y27, or Y36.3.

Washington State Goal Statement:

- Reduce fire-related deaths by 7% from 1.0 per 100,000 in 2004 (59 deaths) to no more than 0.9 by 2010.

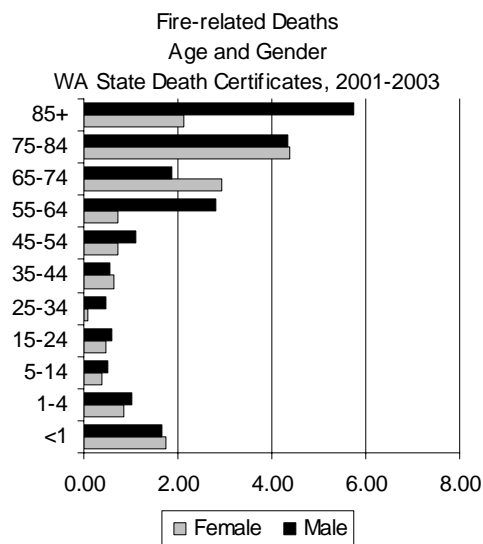
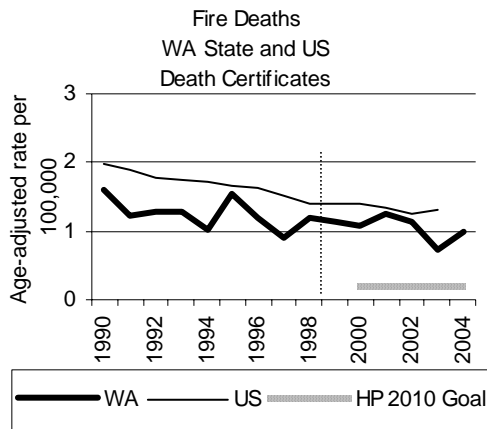
National Healthy People 2010 Objectives:

- Reduce residential fire deaths to 0.2 deaths per 100,000.
- Increase functioning residential smoke alarms on every floor to 100%.

Statement of the Problem:

Fires and burns are significant causes of unintentional injury and death in Washington State. In Washington State, 273 people died and 2,992 were hospitalized from unintentional fire and burn related incidents in the five year period from 1999 through 2003. Thirty six percent of the fatalities occurred in seniors over 65 years of age. In 2004, the financial impact of structure fires was estimated at more than \$114 million in property and content loss alone.

Although mortality and morbidity numbers have generally declined in the past ten years, these deaths and injuries remain a substantial public health problem. Fire and burn injuries are the second leading cause of injury hospitalizations and the fifth leading cause of deaths for Washington children 0-4 years old.



Fires

Some population subgroups are particularly at high risk for injury and death from residential fires. Young children and older adults have higher death rates compared to those in other age groups. Children are disproportionately affected because they react less effectively to fire than adults, and they generally sustain more severe burns at lower temperatures than adults. Individuals over 65 years of age have death rates over three times that of individuals under 65. This is partially due to other pre-existing medical conditions that make smoke inhalation and burn injuries more difficult to treat and make restoration to health more difficult to achieve.

Higher death rates are also seen in men, persons of low socioeconomic status, and African Americans. Other factors associated with increased risk include physical or cognitive disabilities and households with smokers and/or alcohol users. Most fires and associated injuries are preventable.

Smoking continues to be the leading cause of fire-related deaths in Washington (18%). Ninety percent of the fire-related deaths due to smoking occurred in residential structures. Smoking-related deaths can almost be eliminated if people avoid smoking while they are drowsy or while

they are in sleeping areas. The National Fire Incident Reporting System (NFIRS) demonstrates that the majority of residents that died from smoking-related fatalities lived in metropolitan areas, in single family residential structures; were over the age of 40, and many were under the influence of medications, alcohol, or drugs. The behaviors that contributed to their death was smoking and falling asleep.

Use of smoke alarms have been shown to be an effective, reliable, and inexpensive method of providing early warning in residential fires. A working smoke alarm reduces the risk of death from residential fire by at least 50%. Despite this and although over 90% of homes report having smoke alarms only about three quarters of United States' households report having a functioning smoke alarm. Households below the poverty level and households in rural areas are even less likely to have installed smoke alarms.

Scald Burns:

Scald burns from hot liquids – not fire – are the most common causes of burns to young children. Seventy-five per cent of young children treated for burns have been scalded. Scald burns are one of the most painful injuries a child can suffer from, requiring agonizing treatments and holding potential for permanent scarring. Scalds are most likely to happen at home; common causes are:

- spilled liquids such as tea, coffee, soup, and hot water
- hot tap water
- unexpectedly hot liquids from the microwave

Hot liquid scalds occur when children knock over cups of hot liquid; are splashed by liquid carried by an adult; grab pots off the stove; or pull on hanging tablecloths or placemats.

Recommended Strategies from the Injury Community Planning Group:

1. Increase use of residential smoke alarms.

Smoke alarms have been proven to be an effective, inexpensive means of preventing house fire injuries, although battery replacement and maintenance is essential. Use of lithium powered alarms has shown to improve functionality of alarms, reducing need for battery replacement. Smoke alarms have been shown to consistently reduce death during a house fire by about 50%. Smoke alarm installation programs have proven effective.

2. Expand and implement fire & burn safety education.

Fire safety education normally targeted at older persons, preschool or school age children as well as the general public appears to be a promising method of preventing fire and burn injuries. Media campaigns should include 1) information regarding potential fire and burn dangers; 2) what to do in the event of a house fire; 3) exit drills in the home; 3) recognition and elimination of environmental hazards in older, high-risk buildings; 3) proper use of flammable items; 4) available burn prevention technologies (i.e. flame resistant clothing); 5) the benefits of smoke alarm and sprinkler systems; and 6) Families with children should discuss calling 911 in the event of an emergency. Exit drills in the home needs to be included in fire and burn

safety education, including planning and practicing two ways out of every room as well as a family meeting point outside the home.

3. **Provide scald burn education for parents.**

- Never carry hot beverages or hot liquids or cook while holding a baby.
- Provide constant supervision for children in the kitchen and bathroom.
- Place pan and pot handles towards the back of the stove.
- Don't allow the electric cord from cooking appliances to hang free and in the reach of children.
- Don't use table cloths - children will try to pull up on them.
- Use a travel mug or other cup with a lid to serve hot beverages.

4. **Promote policies** for apartments and public housing to reduce the water heater temperature to no more than 120° F.

5. **Continue state funding for surveillance** of fire and burn injuries to determine causes of fires, understand high risk behaviors and target groups, and for evaluation of current programs.

6. **Inspect and enforce existing building codes.** Most cities have ordinances based on model building codes that establish standards for both new and existing dwellings, inspection and enforcement of existing building codes can be effective in eliminating fire hazards, often present in these older, high risk dwellings. Local fire departments may also assist in onsite inspections of buildings within city or county limits.

7. **Increase use of sprinkler systems.**

Sprinkler systems, when used in conjunction with a smoke alarm, have been proven effective in preventing injury and the spread of fire.

8. **Regulate flammability standards.**

One method of reducing the risk of injury from fire is to prevent the ignition of clothing and other materials through the regulation of flammable fabrics. Federal flammability standards, such as the Children's Sleepwear Standard, and the 1973 Mattress Flammability Standards, are examples of passive intervention that have proven effective in reducing injury risk among children. However, in 1997 and again in 1999, the Consumer Product Safety Commission (CPSC) voted to revise the flammability standards for children's sleepwear. The revised standard excludes infant garments (children under the age of 9 months) from the sleepwear flammability standards.

CPSC voted in new mattress flammability standards to go into effect in July 2007. The new standard will require mattress sets to resist fire or generating heat for 30 minutes of constant exposure to an open flame source.

Maintenance of flammability standards is important for reducing the risk of injury due to flammable fabrics.

9. **Support the sale of fire-safe cigarettes.** One of the most common ignition sources of house fires is a cigarette dropped on a flammable source, such as furniture or bedding. A fire-safe cigarette is a cigarette less likely to burn or smolder and result in a fire. Support legislative efforts to require that only fire-safe cigarettes be sold in the State.

Resources:

Washington State:

1. 2004 Fire In Washington Annual Report from NFIRS, Prepared by the Office of the State Fire Marshal; <http://www.wa.gov/wsp/fire/2004firpt.pdf>
2. Office of the Washington State Fire Marshal website:
<http://www.wa.gov/wsp/fire/firemars.htm>.

National:

3. Jackson ML, Martin MW. Working towards the elimination of residential fire deaths: CDC's Smoke Alarm Installation and Fire Safety Education (SAIFE) Program. *Journal of Burn Care and Rehabilitation* 2005;26(5):434-439.
4. Home Smoke Alarms and Other Fire Detection and Alarm Equipment, Public/Private Fire Safety Council, April, 2006
5. CPSC press release <http://www.cpsc.gov/cpscpub/prerel/prhtml06/06091.html>.

Reducing Fire & Burn Related Injuries in Washington State

Because we have these resources...

...we are able to implement these strategies/activities...

...and create these resources...

...so that we achieve these outcomes for our citizens.

